IMPROVING ACADEMIC INTEGRITY THROUGH ASSESSMENT DESIGN

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About the publication

This literature review is one of the outputs resulting from the "Academic Integrity" project which is funded under the KA2 strand, and aimed at enhancing the quality of teaching and learning processes that are based on the principles of academic integrity, supported by policies, mechanisms and tools that help prevent and detect cases of plagiarism in higher education institutions in Georgia.

INTEGRITY (Academic Integrity for Quality Teaching and Learning in Higher Education Institutions in Georgia) led by Ilia State University (Georgia) involves collaboration with colleagues in Dublin City University , University of Roehampton (UK), Uppsala Universitet (Sweden) and Universitaet Wien (Austria) as well as a range of associated HEIs in Georgia. The aims of the project include, among others, the introduction of plagiarism prevention and detection electronic tools in Georgian HEIs, the design and launch of an information campaign in Georgian HEIs defining academic integrity and promoting best practice principles of academic integrity, as well as faculty development modules in the area of effective assessment, teaching and learning to promote academic integrity. The core objective of the project is to enhance the quality of teaching and learning processes that are based on the principles of academic integrity, supported by policies, mechanisms and tools that help prevent and detect cases of plagiarism in higher education institutions in Georgia.

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ABSTRACT

Improving Academic Integrity through Assessment Design: A Scoping Review

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The term 'academic integrity' has gained currency in recent decades, an interest in better understanding how and why students breach principles of academic honesty has long-since been of interest to Higher Education teachers. However, a clear understanding of how assessment design can be used to reduce student cheating and thereby maintain or even increase academic integrity has not yet been reached.

The purpose of this scoping review was to investigate how assessment design is being used to promote academic integrity and to understand the types of recommendations being made for using assessment design to support academic integrity. The review was conducted using the five stage scoping model proposed by Arksey and O'Malley (2005).

Findings highlight the trend towards personalising assessments to decrease instances of academic dishonesty while promoting student engagement. Findings also highlight the importance of embedding assessments into learning and teaching strategies that focus on developing those skills directly associated with academic integrity.

Finally, most studies highlight the importance of providing timely feedback for students as a means of fostering integrity based skills that can transfer to other contexts, recognising that feedback goes beyond the one-way transmission model from teacher to student and instead conceptualises feedback as a dialogic process to support the development of self-regulating skills among learners (c.f. Carless *et al.*, 2011, Hounsell, 2007; Price *et al.*, 2010; Sadler, 2010).

INTRODUCTION

Despite extensive research on Academic Integrity that has been conducted for at least one hundred years, the link to assessment design has only begun to be explored. While the term 'academic integrity' has gained currency in recent decades, an interest in better understanding how and why students breach principles of academic honesty has long-since been of interest to Higher Education teachers. The need to understand why students cheat, how students perceive cheating and how they react to preventative interventions have been explored by many researchers (e.g., Hartshorne & May, 1928; Hetherington & Feldman, 1964; Mc Cabe, 2005; Cronan, Mullins & Douglas, 2018) with consensus reached in some areas. However, a clear understanding of how assessment design can be used to reduce student cheating and thereby maintain or even increase academic integrity has not yet been reached. The purpose of this scoping review was to investigate how assessment design is being used to promote academic integrity and to understand the types of recommendations being made for using assessment design to support academic integrity.

What is academic integrity? Definitions and understandings

Academic Integrity has been defined by the International Center for Academic integrity (ICAI) as "a commitment, even in the face of adversity, to six fundamental values; honesty, trust, fairness, respect responsibility and courage" (Fishman, 2014) and it is this definition which has been adopted for this scoping review.

Despite the best efforts of academic institutions, dishonest behaviours among students are commonplace (Alam, 2004; Manoharan, 2017). Jones (2011, p. 141) suggests that while many institutions have actively responded to tackling academic dishonesty by instating measures including the adoption of academic honesty policies, the implementation of tutorials aimed at promoting integrity and employing plagiarism detection software, students continue to cheat "whether intentionally or not".

It is reasonable to consider academic integrity and academic dishonesty existing along a continuum.

Literature reviews in these areas tend to focus from one or other perspective (e.g., MacFarlane et al, 2014 in contrast to Ercegovac & Richardson, 2004). The terms academic dishonesty, plagiarism and cheating are used interchangeably in the literature (Theart & Smith, 2012).

What is academic dishonesty?

For the purposes of this paper academic dishonesty should be considered to include "all forms of cheating (e.g. plagiarism, unauthorized assistance on assignments and examinations)" (Lewellyn, 2015, p. 1). Investigations into academic dishonesty tend to focus on understanding how students cheat and why students cheat. There are numerous studies reporting on the methods students employ to cheat (e.g., Ariasian, 2001; Garavalia, Olson, Russell & Christensen, 2007). However, gaining an understanding of how students cheat is arguably of less consequence in this paper. More pertinent to this review is why students cheat.

Why do students cheat?

A range of theories have been proposed to further our understanding of why a student may choose to behave in an academically dishonest way. One example is the theory of planned behaviour, which has been used to explain student's ethical decision making when it comes to misusing online resources for assignments (Riemenschneider, Leonard & Manly, 2011). Fraud theory has also been used by Scott (2017) to explain the link between plagiarism and assessment design. Using the theory of reasoned action, Simkin and McLoud (2010) offer suggestions on how individual's beliefs and values can underpin their decision to behave dishonestly in academic contexts. These theories, although beyond the scope of the present review, are useful in providing insight into how concepts such as motivation, personal integrity and opportunity can be used to develop student's understanding of academic honesty.

A different perspective on why students cheat has led researchers to gather the justifications students have for acting dishonestly. In one such study, Jones (2011, p. 144) reports that students will act dishonestly for the following reasons;

1. Want or need to get better grades
2. Procrastination
3. Too busy, not enough time to complete assignment or study for test
4. Lack of understanding or unable to comprehend information
5. No interest in the subject or assignment
6. Workload/schedule: too many classes
7. Everyone does it and gets away with it
8. No big deal; does not matter to Professor
9. Peer pressure

The findings of Jones' study above, suggest that performance is the number one driver for students to cheat. It can be argued that the need to obtain grades that can ensure students are attractive employment candidates or secure places on post-graduate courses is influencing some students' decision to cheat.

However, it is important to note from the literature, that not all students have a clear and accurate understanding of what it means to act in academically dishonest ways (e.g., McCabe, 2005; Gilmore et al, 2010; Bretag et al., 2014).

In support of this it was discovered that undergraduate students have higher levels of confidence in their understanding of what constitutes academic dishonesty than post-graduate students (McCabe, 2005), even though when put to the test, undergraduate students are likely to breach academic integrity more often. Bretag et al., (2014) also reports that post-graduate students are less satisfied with the type of information they receive on strategies to avoid breaches in academic integrity. In environments where students feel that there will be little or no consequences if caught cheating, academically dishonest behaviour can rise, as students who would not normally do so are more likely to cheat to level the playing field.

What are the implications?

A wealth of literature considers the implications of academic dishonesty in terms of academic and workplace contexts. On one hand, academic dishonesty has a negative effect on the student involved in the behaviour as well as other students. It is reasonable to suggest that students who cheat on assignments and assessments are devaluing their learning and preparation for dealing with the complexities of the twenty-first century workplace. Research further suggests that other students will cheat if they feel that by cheating they are levelling the playing field (McCabe, 2005), particularly in situations where cheating does not appear to carry heavy penalties. On the other hand, Dick et al., (2002) highlights the risk of "graduating incompetent professionals" (p. 173), which can negatively affect society, as "incompetent professionals may produce work that fails or is even dangerous to human life" (Dick et al., 2002, p. 173). This point is echoed in the literature by Jones (2011, p. 142), who points out that there is an indisputable connection between "academic honesty and workplace ethics".

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Nonis and Swift (2001) also claim that the tendency to cheat at work was highly correlated with the frequency of cheating in college. Dick et al., (2002) suggest that the profession, the Institution and the degree can also be called into question as "every professional represents the profession to the wider community and any incompetence will reflect badly on it" (p. 173). Crittenden, Hanna and Peterson (2009) move a step further by suggesting that current learners who will someday be business leaders may be "learning to inextricably combine the cheating culture with best business practices" (p. 337).

Thus, as outlined, despite a wealth of literature exploring a myriad of issues pertaining to academic dishonesty,

a clear understanding of how assessment design can be used to reduce student cheating and thereby maintain or even increase academic integrity has not yet been reached.

This paper therefore seeks to address this gap.

Why this review?

This scoping review draws on the objectives of the Integrity Project which intends to introduce the right technology to support academic integrity and cultivate the relevant culture within the Georgian HEIs. The project will support Georgian universities in developing and enhancing their student services to boost their writing skills that focus on academic integrity.

Despite claims of a cheating culture in academia (e.g., Callahan, 2007; Selingo, 2004) it is important to note that, in the main Higher Education students appreciate the importance of academic integrity in a variety of contexts. A recent Australian study of 15,304 students across six universities reported that "92% of students, both domestic and international, agreed that academic integrity had relevance to their life or work experience beyond the university" (Bretag et al., 2014). This finding, among others gave rise to the recommendation that active support and on-going education needs to be provided for students on all aspects of academic integrity. Some approaches reported in the literature have focused on clarifying institutional policy regarding academic integrity (e.g., Schein, 2003). Others target the creation and delivery of bespoke modules which focus on teaching components of academic integrity (Belter & du Pré, 2009). There is also evidence of the development and implementation of a code of honour (Theart & Swift, 2012) to influence students' attitudes to cheating. Fewer studies focus on addressing the nature of assignment and assessment design (Scott, 2017). However, literature clearly points to a positive mindset shift from penalising students for academic dishonesty towards educating students to ensure academic integrity. This approach could also support the recent shift from assessment of learning to assessment for learning. This scoping review aims to bridge the current gap by reporting how assessment design has been used to promote academic integrity. This paper also aims to enhance understanding of best practice recommendations in this area.

How did we review the literature?

The design for this study reflects a scoping review rather than a systematic review. This form of review is increasing in popularity for its effectiveness in synthesizing research evidence (e.g., Levac, Colquhoun & O'Brien, 2010; Daudt, van Mossel & Scott, 2013; Egan et al., 2017) and is deemed appropriate here given the breath of contexts to be explored in order to address the aim. The review process used reflects five of the six stage framework proposed by Arksey and O'Malley (2005, p. 8 - 9).

1. Identifying the research question
2. Identifying relevant studies
3. Study selection
4. Charting the data
5. Collating, summarising and reporting the results.

1. Identifying the initial research question

The focus of this review was to understand how assessment design was being used to promote academic integrity and to raise awareness of best practice recommendations in this area. In order to capture relevant research relating to this topic, the following research questions were posed to guide the search;

1. How is assessment design being used to promote academic integrity?
2. What recommendations are being made on the using assessment design to support academic integrity?

2. Identifying relevant studies

Given the broad nature of this review, using the framework suggested by Arksey and O'Malley (2005) was of benefit. This review was focusing on literature in different academic disciplines and interventions that tackle a range of academically dishonest behaviours. As such, parameters were set to manage the search. Specifically only studies published since 2000 were considered, as the use of technology for assessment and plagiarism detection became more regular. Also, only studies available in English were considered, (as that is the only language of the researcher) and only studies published in peer-reviewed journals were considered. A systematic search was conducted on the following electronic collections and databases; EBSCOhost Academic Search Complete, British Education Index, Education Full Text, ScienceDirect,

Education Research Complete, PsycInfo and Web of Science (Science and Social Science Index). Searches of titles, abstracts and keywords were conducted using the key search terms listed in Table 1. Google Scholar was used to identify other sources that could lead to relevant findings.

Table 1: Key Search Terms

Search items
"assessment design" AND cheating OR plagiarism
"assessment design" AND integrity
"assessment design" AND dishonesty
"approach to assessment" AND cheating OR plagiarism
Assessment AND "reduc* plagiarism" or "reduc* cheating"
Assessment AND cheat* OR plagiarism OR integrity AND undergrad* OR postgrad*

3. Study Selection

The search descriptors yielded 4,530 results. A quick review of the titles resulted in the fast elimination of 1,220. Of the 3,310 articles that remained, an online review of the abstracts rendered a very high proportion irrelevant. The main disqualifier was the lack of a clear intervention or focus on recommendations that used assessment design to promote or enhance academic integrity. The majority of irrelevant articles were primarily focused on cheating behaviours used in assessments rather than how assessments can be used to negate the behaviours. The aim of the papers were scanned and judged according to their relevance. The same situation arose when search criteria were entered into Google Scholar. A high number of responses were returned, however many of these were irrelevant given the scope of this review. There was also a great deal of duplication in the results of the database searches and those from Google Scholar. Using the criteria as a strict guide, 10 studies were deemed relevant and full text copies of each article were obtained. In reviewing each of these articles, a scan of the reference section of each allowed for further exploration of published data that may have been missed in the database searches.

4. Data Charting and Collection

The next stage of the process focuses on breaking down the information in the relevant articles to being to assess the landscape of the research. In the present review, the following details were recorded from each paper; author(s), year of publication, geographical region of study, sample details, Integrity challenge, assessment design and implications of the intervention. It is evident from the search of the databases that there is a dearth of

empirical research conducted in this area, a view that has also been proposed by Scott (2017). From the perspective of a scoping review, the main purpose of charting is to develop consensus on what information should be extracted from each study. To focus on the most relevant studies inclusion and exclusion criteria were formulated, which are outlined in Table 2 below:

Table 2: Inclusion and Exclusion Criteria

Criterion	Inclusion	Exclusion
Time	2000 - 2018	Studies pre-dating 2000
Language	English	Non-English
Type of Publication	Peer-reviewed, original research, published in journals	Content that was not peer-reviewed, not in journals, not original
Sample	Higher education students from undergraduate to postgraduate students level	Primary or second level
Focus of literature	Presenting findings from applied interventions that focus on assessment design to target integrity Best practice recommendations based on research or reviews that strictly refer to the use of assessment or assessment design to managing academic integrity Academic dishonest behaviours such as; plagiarism, cheating, copying, purchasing solutions	Research on students perceptions of academic dishonesty Plagiarism detection software Institutional reform literature recommendations that do not explicitly consider assessment design or assessment type

5. Collating, Summarising and Reporting the Results

The final stage of Arksey and O'Malley's framework is the summarising and presentation of findings. The scoping review resulted in 10 studies which crossed multiple disciplines and related to both face-to-face and online learning environments. Table 3 in Appendix A outlines the main components of the selected studies.

What did we find out?

The questions guiding this scoping review were:

What approaches to assessment design are being used to promote or maintain academic integrity?

What recommendations are being made on the using assessment design to support academic integrity?

The result of the review highlighted ten papers with a strong focus on enhancing academic integrity, primarily through tackling academically dishonest behaviours, one paper focused heavily on addressing the educational culture (see Appendix A for full table details). Scott (2017, p. 2) makes the point that that there has been little research conducted in aspects of academic dishonesty, and "still fewer studies offer specific strategies...". The scoping review revealed that the majority of research published in this area comes from Australia, with few studies from elsewhere. The review can conclude that there is a dearth of research on this topic from the UK, Ireland and Europe.

What assessment strategies are used?

There are a range of strategies reported in these studies that have been tried and tested and which may hold value if used in other contexts. The available literature suggests that there is a desire and a focus on reducing plagiarism which Hamilton & Richardson (2007, p.37) have described as "honesty and encouraging students to submit work which is entirely their own, or correctly referencing other work". The majority of studies presented above which focus on plagiarism, use assessments designed to provide students with the opportunity to practice writing and to get feedback on their attempts, which allows the student to know whether or not they plagiarised and what they need to do to avoid that mistake in future assessments. The assessments given to students are generally low stakes or move from a no-grade to a low stakes value. Feedback plays a crucial role and in some cases students receive 'best answer' samples as they are provided with examples of writing that avoids plagiarism.

A different approach to reduce plagiarism saw the use of a rubric to provide clear feedback to students on their written work. Razi (2012) suggests that the rubric can be used as a teaching tool and as an aid in assessment design. In sharing the rubric with students in advance of their preparation or the submission of their piece, students are made aware of good writing behaviour early and thereby have the opportunity to avoid common mistakes that may lead to plagiarism.

Another idea offered to target plagiarism is the use of an information map (Walden & Peacock, 2006). This design approach has students maintain a log of their thinking and planning processes in order to record key stages, use of materials and the development of their solution over time. The opportunity for staff to see their student's ideas evolve over time can reduce or even eliminate some forms of plagiarism, e.g., person-to-person plagiarism.

Plagiarism is frequently associated with essay type assignments yet it can also occur in report-based assessments. One idea offered to manage this type of behaviour through assessment design is the use of frequent, personalised, low-stakes assignments. The idea proposed by Manoharan (2017), was to leverage technology to allow students to take different forms of the same assessment. The students in that study were working towards the same learning outcomes, yet the assessments given to each differed slightly in terms of question format. Leveraging technology to randomly assign an assessment to a student and to provide timely feedback is a useful tool to reduce plagiarism in a large class. However, this method will work best with content that is formulaic as opposed to content that is open to interpretation.

The results of this scoping study also indicate that reducing plagiarism in case studies has been examined. Some aspects of the assessment design suggested by Scott (2017) share some of the features used in the studies, which have been outlined above. The first such feature is the use of personalised cases to ensure that each group has a different focus. This will reduce the opportunities for groups to engage in person-to-person plagiarism. Also, modifying standard cases so that they are not

identifiable to students before they have generated their solution is a crucial part of the assessment design. Cases that appear unique to students will reduce the tendency for students to seek solutions online or via other strategies. As Scott (2017) points out; it becomes less time consuming for the students to generate their own solution rather than to look for one already published in texts or online. Another component of case study assessment design that will enhance academic integrity is the inclusion of an aspect of creativity or problem-solving that allows students to come up with a solution that falls within a wide range rather than 'the right answer'. This design strategy was echoed by Hamilton & Richardson (2007).

Academic integrity can be compromised in online environments primarily through identity fraud. Olt (2002), suggests strategies to mitigate this behaviour, however the suggestion is also made to design assessments that support open-book/notes formats. The suggestion is also made that these open assessments be held frequently over the duration of the course, to reduce the impact of having someone else take a high-stakes online assessment in place of the registered student. Interestingly, Dick et al. (2002) also recommend open-book exams in traditional learning environments, as they deem it a useful design strategy to promote academic integrity and student engagement.

What are the main takeaways from the review?

In this section a brief discussion of the findings will be presented and connected back to the broader context of academic practice in Higher Education. A number of gaps and limitations in the literature will also be highlighted.

The studies which were explored in this scoping review support the idea that as educators we should be educating students about academic integrity rather than being punishers when this integrity is breached. This mindset also reflects a wider view that the institution as a whole has a part to play in supporting students and staff in this regard. Bretag *et al.*, (2014) point out that a useful starting point is for all stakeholders not to …" assume that they share understandings of what is entailed in the concept of academic integrity" (p. 1150). This point echoes that of many other researchers who suggest that students and staff need to be provided with clear information on how academic integrity is defined, what behaviours it encompasses, the institution's policy of and response to breaches in academic integrity.

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Many of the ideas proposed in the assessment designs outlined in this review suggest a scaffolded approach to learning the positive behaviours associated with academic integrity (e.g., Owens and White, 2013; Taylor, 2014). Assessment design that uses scaffolding as a basis for learning is likely to support student's incremental development. Using this approach, as students' progress through their academic programmes, their opportunities to practice and develop their skills will be enhanced. Timely and useful feedback is an important element of scaffolding and is also a design feature in a number of the studies in this review.

Some studies reported here also proposed personalising assessments. This design approach has clear benefits as it allows students to engage in relevant and interesting assessments (e.g., Scott, 2017; Walden and Peacock, 2006). This approach however can give rise to time pressures for staff. In this regard, the trade-off has been explained as; reduced time in dealing with plagiarism cases (e.g., Manoharan, 2017). The other advantage to personalisation in design is the bank of assessments that exit after the course has been run more than once. Dick *et al.*, (2002) suggest that changing and building a pool of assessments will help keep the course interesting and relevant for students.

Assessment design that supports student's creativity, problem-solving and reflection enhance academic integrity. Hamilton and Richardson (2007) highlight the importance of allowing students to contribute an unique aspect into their assignment. In these instances, a well-designed assessment will not only promote academic integrity, it will do so by enhancing student engagement. This idea is supported by Walden and Peacock (2008). It can be argued that assessment design which espouses this approach, may also be supporting students in their development of workplace competence, where integrity, problem-solving, innovation and continuous learning are required.

What are some of the major gaps?

From conducting this review the following three gaps in the literature have been identified. Firstly, there are few empirical, validated studies in this area to draw from. It would be useful for educators in different contexts to test their ideas and publish their findings in relation to the impact of interventions on academic integrity. Secondly, few studies adopt a longitudinal approach in order to establish if there is a long-term impact of the intervention on student's behaviours. Finally, there are not enough concrete examples presented in the literature to allow other researchers to fully replicate the assessment design.

What are the key recommendations?

Based on the studies in this review the following recommendations emerged in regard to using assessment design to promote or maintain academic integrity;

1. **Design assessments that will scaffold students though the development of academically honest behaviours.**

2. **Design assessment that allows students to incorporate some of their own personal experience, ideas or reflections.**

3. **Design assessment to promote academic integrity should move from no-grade to low-stakes to high-stakes to support students as they develop their confidence over time.**

4. **Design assessment using a personalised approach. These assessments can be small and sequential, with prompt feedback.**

5. **Embed assessment into coursework and not form part of a stand-alone 'academic integrity-type' module.**

6. **Provide feedback on the specific skills to be developed to students in a productive and timely way.**

7. **Provide examples of 'good' responses to ensure that all students have the same understanding of academic integrity.**

Assessment design that uses scaffolding as a basis for learning is likely to support student's incremental development. Using this approach, as students' progress through their academic programmes, their opportunities to practice and develop their skills will be enhanced.

From this review it is evident that academic integrity is important to both educators and students. Furthermore learning about integrity is a skill (rather than including learning a second time) that will transfer to contexts outside the boundaries of Higher Education. The studies presented and recommendations made are calling educators to think differently about how they are approaching assessment design so that students are engaged in relevant and useful assessments that continue to help them in the development of their skills in this area. Institutions are being asked to review their approach, beginning with the establishment of a definition and policy relating to academic integrity that students and staff alike understand. It is from this platform that educators can use assessment design to promote academic integrity and from there ensure that it becomes a feature other elements of learning and teaching.

Assessment design that supports student's creativity, problem-solving and reflection enhance academic integrity.

APPENDIX A

Table 3: Key Details of Selected Studies

Author	Sample	Region	Integrity Challenge & Assessment Design	Implications
Scott, S. 2017	N = 182 Intermediate financial accounting students	Canada	**Reduce plagiarism in group case assignments** The Numbered Company Cases Approach: 1. Develop a pool of cases, to allow a different case per group rather than one per class 2. Edit case details to integrate original or novel information, as students will not have encountered this before 3. Consider using case numbers rather than identifying information to discourage students from searching for published answers 4. Update the pool regularly with new character information; names, location, etc. 5. Only after students select their group and have agreed submission details should the case be presented 6. Restrict access to the pool, ensuring students only see their case.	• Reduced the likelihood of a solution being obtained from another student or from another source. • Is less effort to complete the task rather than search for a "best solution" online. • Can allow for creativity in the solutions, which can increase engagement.
Manoharan, S. 2017	N = 360 Computer Communica-tions 2nd year UG	Aus	**Reduce plagiarism in large classes** The use of a personalised assessment software framework; When a student logs in, they will receive; An automated personalised assessment and blank answer sheet When the complete the task and upload it to the software, responses will be automatically marked and feedback returned to the student	• Reduced cases of plagiarism as it takes away the opportunity for students to collaborate on responses. • Promoted students individual engagement with course material. • Framework works best for Science and Engineering subjects owing to the formulaic nature of the content.
Razi, S. 2012	190 Freshman students in English Language Teaching Dept.	Turkey	**Reduction of plagiarism** The development of a 50-item rubric for staff, in order to simplify and standardise the process of evaluating academic papers; The rubric is called the "Transparent Academic Writing Rubric" (TAWR) and is a useful support for learners in developing their writing skills and also to deepen understanding of citations in writing.	• Using the TAWR in conjunction with plagiarism detection software can increase student's ability to cite correctly. • Using the TAWT tool in learning and assessment can reduce plagiarism

Walden, K., & Peacock, A. 2006	Students in the Faculty of Art and Design	UK	**Reduction of plagiarism** Development of an Information handling map (i-Map) to chart the enquiry process used by the student. The i-Map helps the students to show how ideas evolved and solutions were generated through the enquiry and communication phases of the assignment. The i-map helps the student to structure their response in written assignments. It can be a visual representation of the student's process and contains a rich mix of ideas and resources. Each student captures their progress through the following seven stages using their i-map; 1. Defining of the problem/task or brief. 2. Defining the broad scope of the topic. 3. Gathering information from a wide variety of sources to address the definitions outlined. 4. Evaluating the material gathered and noting anything outstanding. 5. Managing and editing material to compose ideas 6. Managing and developing arguments and standpoints 7. Drafting and redrafting to ensure quality communication.	• Assignment briefs are written in a way that provides students with guidance on what to include in their i-maps. This can increase academic integrity as students are aware of expectations. • As a tool for helping students to plan responses, the i-map allows staff to see and authenticate student's ideas at an early phase. • The i-map removes the motivation to engage in plagiarism as it records individual pathways of thinking
Volkov, A., Volkov, M., & Tedford, P. 2011	3rd year, undergraduate students; and post-graduate, MPA students (Master of Professional Accounting)	Aus	**Reduction of plagiarism** A compulsory 750 word formative assignment (essay structure), where students were required to show their referencing capabilities. A minimum of three different sources of information were to be used, along with one direct and one indirect quote. The Harvard referencing style was to be used and as part of the feedback structure, students received qualitative feedback on the quality of their referencing. Students were also provided with a generic feedback sheet of common errors.	• Tasks that are designed to help students to understand how and why they should reference correctly; will reduce plagiarism. • These exercises have the same benefit to students whether they are at undergraduate or postgraduate levels. • Students report finding these types of assessment exercises useful in developing their confidence in referencing skills.

Owens, C., & White, F.A. 2013	N = 14388 1st year Psychology Students	Aus	**To detect and discourage plagiarism in large 1st year psychology cohorts** Semester 1 was focused on integrity and honest behaviour applied to essay writing. Assessment strategies used were; A formative written exercise with on-line feedback provided to students on their performance. Students found to have plagiarised were informed via email and provided with examples of good writing. All students received examples of plagiarism and good writing. Semester 2 was focused on integrity and honest behaviour applied to report writing using a similar written exercise. Across both semesters a series of Online Mastery Quizzes were scheduled, for low stakes grades which focused on aspects of plagiarism. Students received automatically generated feedback and students were allowed multiple attempts.	• Plagiarism understanding and awareness increased over time • Where plagiarism occurred in the essay writing task, it was more commonly related to sources. • Where plagiarism occurred in the report writing task it was more commonly related to person-to-person copying. This highlighted the need to clearly educate students on how to avoid these behaviours. • The regular mastery quizzes had a significant effect on sustaining positive behaviours when introduced as part of a strategy rather than a stand- alone assessment.
Olt, M.R. 2002	On-line	N/A	**Academic Dishonesty; Who is logging on when talking online assessments** **Plagiarism from sources** Use personalised assessments throughout the course. These should be designed as short, sequential, individualised assignments that provide scope for personal responses. Provide students their login details for a very short time before their assessments and change these details regularly or for each assessment. Make all assessments open-book Design 'Mastery-Type' questions which ask students to relate content knowledge to their own personal experience In a process-oriented assessment students should submit drafts of work as they progress through their assignment. Use project-based assignments that require creativity. Change assignments regularly.	• It will be difficult for students to have someone login in their place, when key access information is given soon in advance of assessments. • By incorporating personal elements into the assessment briefs or assessment design, independent engagement is increased and plagiarism from sources and person-to-person is decreased. • Project-based assessments can be crafted in a personal way to reduce plagiarism.

Hamilton, M., & Richardson, J. 2007	ICT	Aus	**Developing students own academic integrity** Case-based assessments which allow for creativity and problem-solving by asking students to bring in a unique aspect, e.g., how something might relate to their personal experience. Build in a form of questioning for students to allow them to explain aspect of their solution. Design case study assessments that allow for more than one solution and where the interface and justification are always different. Responses from students should then be communicated digitally, orally and in hard copy. Work-integrated learning can offer each student a distinct experience which can be incorporated into work-based projects. Regarding traditional written assignments, research papers may be submitted via plagiarism detection software and students could then engage in an exercise to evaluate different types of digitally transmitted information.	• Questioning students about aspects of their solutions is a means of authenticating work • Reduced cheated as personal experience is part of the answer. • Assessments based on workplace learning can increase academic integrity, as workplace mentors will differ as will each student's experience. • Assessments that allow students to engage in problem-solving and creativity have a higher chance of producing original solutions.
Dick, M. *et al.* 2002	62 International Academics	Aus	**Reducing cheating with quality assessment items** The use of personalised assignments for individual's or for groups. Change assessments and assignments on completion of a module. This will build up a bank of relevant material for testing learning outcomes. Employing open book, open note exam formats. Preparation for these types of exams should be given throughout the year.	• Personalised assignments will reduce source and person-to-person copying. • Students cannot as easily source answers from students who have completed a module if assessment tasks are changed regularly. • Having open book/note exams will reduce plagiarism and increase engagement with content.

APPENDIX B

Specific objectives of the Academic Integrity project are the following:

Plagiarism and academic dishonesty attracted significant scholarly and practitioner's attention in recent decades due to the technological advancements (various software are easily available nowadays) and globalization bringing fast ways to detect the cases of plagiarism.

The project intends introduction of the right technology to support academic integrity and cultivate the relevant culture within the GE HEIs. The project will support Georgian universities in developing and enhancing their student services to boost their writing skills that focus on academic integrity. For this purpose, the project will provide the institutional framework, mechanism and tools for Georgian universities to establish effective tutoring opportunities for students in the field of academic writing while combating Plagiarism.

The project will result into well-shaped and consistent framework of university policies and regulations that are conducive to quality teaching and learning processes based on the principles of academic integrity.

1. **Plagiarism Prevention & Detection Electronic Program.** Through this project, it is intended to introduce plagiarism detection and prevention/feedback instrument in GE HEIs,

2. **Coherent and Consistent PR campaign.** It is intended to design and launch a PR campaign as an important promotional mechanism that targets both students and instructors defining academic integrity and how to best engage the audience to prevent it. The PR campaign employs diverse resources and incorporates social media, websites and online resources (i.e. guides, videos). It helps various targets to increase awareness, use of technology and approach to prevent it.

3. **Faculty/Teaching Staff Training Modules.** The project aims to develop and deliver training modules for professional development of university faculty, teaching staff, especially junior faculty in the area of effective assessment, teaching and learning (ATL) targeting instructors' skills to provide effective feedback to students that focuses on student performance against the principles of academic integrity. At the same time, they help instructors master advanced technological tools that are used to detect and prevent cases of plagiarism in student work.

4. **Student Services.** The project aims at developing and enhancing student services to boost their writing skills with an eye on academic integrity. For this purpose, the project provides framework, mechanism and tools for Georgian universities to establish effective tutoring opportunities for students in the field of academic writing.

5. **Academic Writing Curriculum Review.** Realizing the importance of quality curriculum for the delivery of high quality teaching and learning processes the project aims at allowing Georgian Higher Education Institutions to review their academic writing curriculum (bachelor, master and PhD level) against standards and requirements established for written academic communication. It also allows universities to shape their academic writing curriculum with advanced technological tools and instructional strategies geared towards prevention and detection of plagiarism in student work.

6. **University Policies and Resources.** The project aims at helping higher education institutions shape their consistent framework of policies and regulations that are conducive to quality teaching and learning processes based on the principles of academic integrity. Importantly, it allows universities to develop their resources (e.g. guides) and introduce advanced tools (Moodle, Turnitin) to support effective academic instruction.

Project EU Partners

University Of Roehampton (UK)
University Of Uppsala (Sweden)
University Of Vienna (Austria)
Dublin City University (Ireland)

Georgian Partner HEIs

1. Ilia State University (Coordinator)
2. Tbilisi State University
3. Batumi Shota Rustaveli State University
4. Iakob Gogebashvili Telavi State University
5. David Aghmashenebeli National Defence Academy Of Georgia
6. Shota Meskhia State Teaching University Of Zugdidi
7. Samtskhe-Javakheti State University
8. Akaki Tsereteli State University
9. Caucasus University
10. Bank Of Georgia Teaching University Ltd
11. Academy Of The Ministry Of Internal Affairs Of Georgia
12. David Tvildiani Medical University

Government & Associate Partner

1. Ministry Of Education And Science Of Georgia (Structural Measure Key Partner)
2. National Center For Educational Quality Enhancement (Associate Partner)

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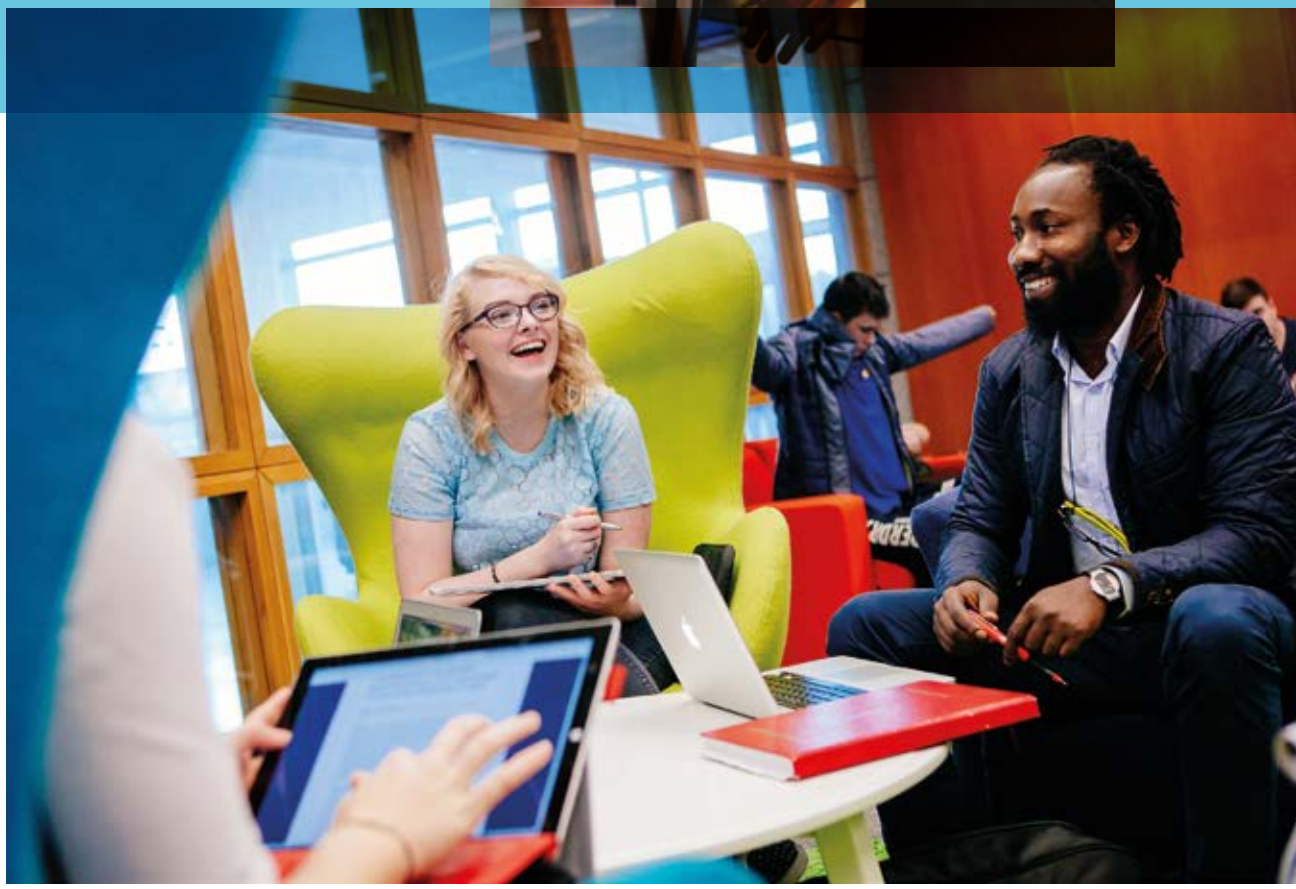

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